STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION

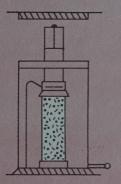
RAYMOND T. SCHULER, COMMISSIONER

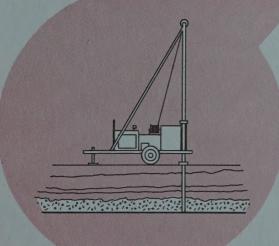


SOIL MECHANICS
BUREAU









CONTRACT FASTELD 73-1

TEST WELL REPORT
SOUTHERN TIER EXPRESSWAY
LOWMAN-WAVERLY PT. 1
WESTBOUND REST AREA
CHEMUNG COUNTY

June 1973



DATE July 10, 1973

SUBJECT TEST WELL REPORT, SOUTHERN TIER EXPRESSWAY, LOWMAN-WAVERLY, PT. 1, FASTELD 73-1, CHEMUNG COUNTY

By: W. P. Moody

TO L. W. Hallenbeck, Regional Director, Region 6

J. Sternbach, Construction Subdivision, Room 406, Bldg. 5
 M. D. Graham, Facilities Design Subdivision, Room 405, Bldg. 5
 Attn: J. J. Ryan

Enclosed is a copy of a test well report prepared by Mr. Vance Bryant, Senior Engineering Geologist, describing work done under the subject contract.

Due to the high yield and low drawdown in the two wells, no specific recommendation regarding pumping rate and pump location was made. The favorable results will allow the State Architect leeway in designing the pump system.

Please contact this Bureau if you have any questions concerning this report.

WPM:FJG:MTC Encl.

63

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STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION SOIL MECHANICS BUREAU

TEST WELL REPORT
FOR

SOUTHERN TIER EXPRESSWAY
LOWMAN-WAVERLY PT. 1

WESTBOUND REST AREA

By

Vance Bryant Senior Engineering Geologist

June 1973

STATE OF NEW YORK STREET ON SOTE MECHANICS SIRELY

TEST WELL REPORT

SOUTHERN THER EXPRESSIVAY LOWENN-WAVERES PT. 1

WESTBOUND BEST AREA

VB

Vance Bryant Sentor Maginzering Geologist

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ABSTRACT

Test wells were constructed under Contract FASTELD 73-1 for the Westbound Rest Area on the Southern Tier Expressway in Chemung County. The work was completed in June, 1973.

Drilling and Test Data is included as obtained from records, samples and direct observation.

Included in the Appendices, one per well, are the results of drilling and pump test data as determined by the writer, as well as copies of the driller's logs. Also included are the results of all physical, chemical and bacteriological testing performed by a private laboratory on water samples obtained directly from each well.

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LOCATION PLAN	3
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APPENDIX B - TEST WELL NO. 2	B1-16

TARLE OF CONTENES

June 27, 1973

UBJECT

DATE

FASTELD 73-1 SOUTHERN TIER EXPRESSWAY, LOWMAN-WAVERLY PT. 1 CHEMUNG COUNTY, P.I.N. 6147.14-301

FROM

Vance Bryant, Senior Engineering Geologist

TO

W. P. Moody, Associate Soils Engineer

During the months of May and June, 1973, the writer assisted Mr. J. Dieter (EIC) of Region No. 6 in supervising and inspecting the construction of the test wells on the subject project. Drilling was initiated on May 7 and final samples taken for testing on June 8. All phases of the project were completed within the allotted quantities and with no significant difficulty. The desired yield was obtained and surpassed by a large margin, thereby allowing considerable leeway in the choice of pump size and location within each well. The static level (water table) should correlate closely with the seasonal river level elevation. There should be no lack of supply of water to the wells even in periods of severe dry weather.

The two wells were completed as screened wells in sand and gravel. To determine the depth of placement for the screens, both wells were drilled below good water bearing material into unsuitable material. Well No. 1 was drilled first, to a greater depth than well 2, to determine the nature of the subsurface material. Well No. 2 encountered similar strata and was, therefore, terminated at a shallower depth when fine grained material was encountered below good water bearing material. On the basis of the grain size analyses of the aquifer, variable slot screens were fabricated. The 50% size was used to determine the screen slot size due to problems always encountered in obtaining representative samples. The screens were placed at the same depth, 60 to 70 feet below ground, in both wells. Development of the wells proceeded smoothly and was satisfactorily completed within the allotted time period. Pump testing, step drawdown and continuous yield, also went smoothly with one exception. As shown in the test data for test well No. 1 (Appendix A) a pump malfunction occurred during the step drawdown test. When the test was resumed

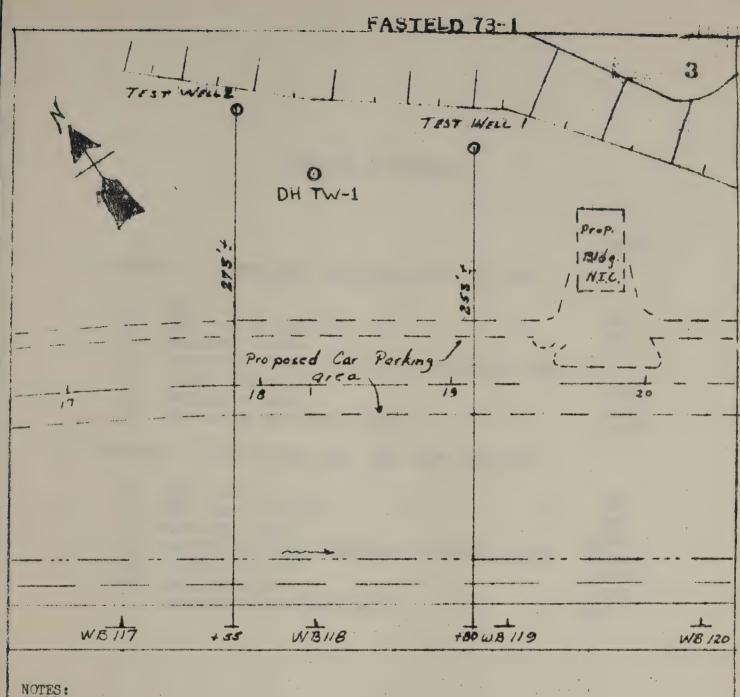
Mr. W. P. Moody Page 2 June 27, 1973

several days later, a check was made at the rate where the breakdown occurred (25 G.P.M.). No disagreement was noted in the drawdowns on the two days so the test was continued from that point.

Well drilling and pump test data based on the writer's observation and interpretation are included in the appendices which accompany this report. Also included in the appendices are copies of the driller's log for drilling, developing and testing the wells as furnished by the Randolph Well and Pump Company. Some difference will be noted in water levels between the writer's and the driller's report. This is due to different reference points, i.e. the top of casing and original ground respectively. The writer recommends using the O.G. measurements since short sections of casing were added to the total casing length upon completion of testing. This was done to bring the top of casing up to the required one to two feet above ground.

Chemical, physical and bacteriological test results, all of which are satisfactory, are included in the appendix for each respective well. This data has already been furnished to the State Architect for study in designing the water system.

VB:cb Attachment



- 1. It is the intent of this contract to obtain two (2) wells each producing 15-20 G.P.M.
- 2. All well logs & capacity test data shall be forwarded to the Deputy Chief Engineer. (Research)
- 3. The contractors attention is called to the necessity of obtaining chemical and . bacteriological samples for analysis as detailed in the specifications.
- 4. For item 63a through 63i in this proposal see the "State Architects Standard Specifications of Jan. 2, 1966, item 63-Well Construction" , which is in Part III-general engineering specifications for unit Price contracts:

DEPARTMENT OF TRANSPORTATION Region 6 Southern Tier Expressway Lowman-Waverly Chemung County

Comfort Station Westbound Lane	Scale
Test Wells	11490
Plot Plan	6-18-71

-3-

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APPENDIX B - WESTBOUND REST AREA-TEST WELL NO. 2	
1) WELL DATA 2) WELL LOG & DETAILS 3) PUMP TEST DATA 4) BACTERIOLOGICAL, CHEMICAL & PHYSICAL DATA 5) SIEVE ANALYSIS 6) DRILLER'S LOG	B8-11 B12
7) DRILLER'S PUMP TEST DATA	B1 3-16



APPENDIX A

WESTBOUND REST AREA-TEST WELL NO. 1



LOCATION

Centerline Station: WB 118+80

Offset: 253 Feet Left

Original Ground Elevation (0.G.): 832.6(+)

DRILLING DATA

Contractor: Randolph Well & Pump Company

Driller: Fran Haynes
Date Started: 5/7/73
Date Completed: 5/10/73

WELL DATA

Source of Water: Granular Material

Overburden: Sand & Gravel

Static Level During Drilling (Water Table): 42 To 43 Feet

Depth of Well: 81.5 Feet

TEST DATA

Date Started: 6/7/73
Date Completed: 6/8/73

Location of Pump Intake: 58(+) Feet

Static Level During Testing (Water Table): 42(-) Feet

Yield: 65 Gallons Per Minute

Drawdown: 7 Inches

Specific Capacity: 110(+) G.P.M. Per Foot of Drawdown

PUMP DATA

Make & Type: Goulds 3HP Submersible-Model UTM30412

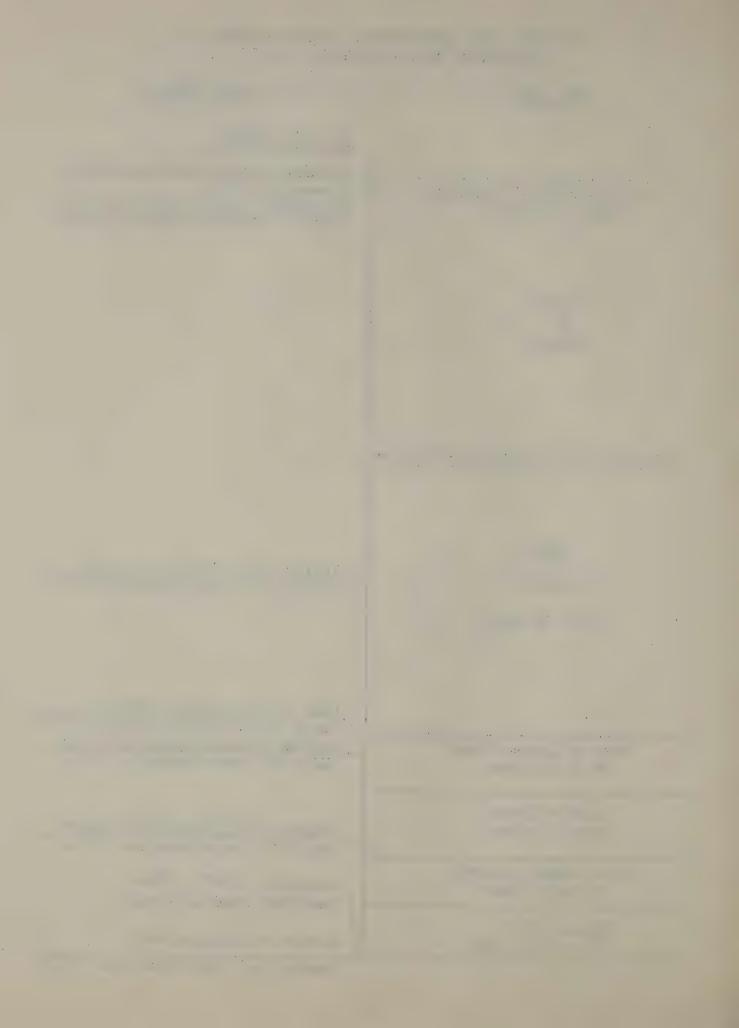


WELL LOG

WELL DETAILS

Top of Casing

	Elevation-834.6
•	Original Ground Surface (0.G.)
Regraded Natural Material (Sand & Gravel)	Elevation-832.6 Drawdown, Pumping Rate-65 G.P.M. Depth 7 Inches-Elevation 832.0
Sand & Gravel	
Thin Silt & Clay Layer-30(±) Fee	t
Sand & Gravel O To 58 Feet	Static Level During Testing Depth 42(-) Feet Elevation 790.6
Fine & Coarse Sand	Pump Intake During Testing Depth 58(+) Feet-Elevation 774.6 Bottom of Casing-Top of Screen
58 To 64 Feet	Depth 60 Feet-Elevation 772.6
Sand & Gravel 64 To 71 Feet	Bottom of 10 Foot Well Screen Depth 70 Feet-Elevation 762.6
Silt, Sand & Gravel 71 to 76 Feet	Backfill (70-81.5 Feet) Bank Run Sand & Gravel
Glacial Till 76 to 81.5 Feet	Bottom of Drilled Well
	Depth 81.5 Feet-Elevation 751.1



STEP DRAWDOWN TEST

Static Level During Test - 41 Feet 10 Inches Below Original Ground Pump Intake During Test - 58(+) Feet Below Original Ground

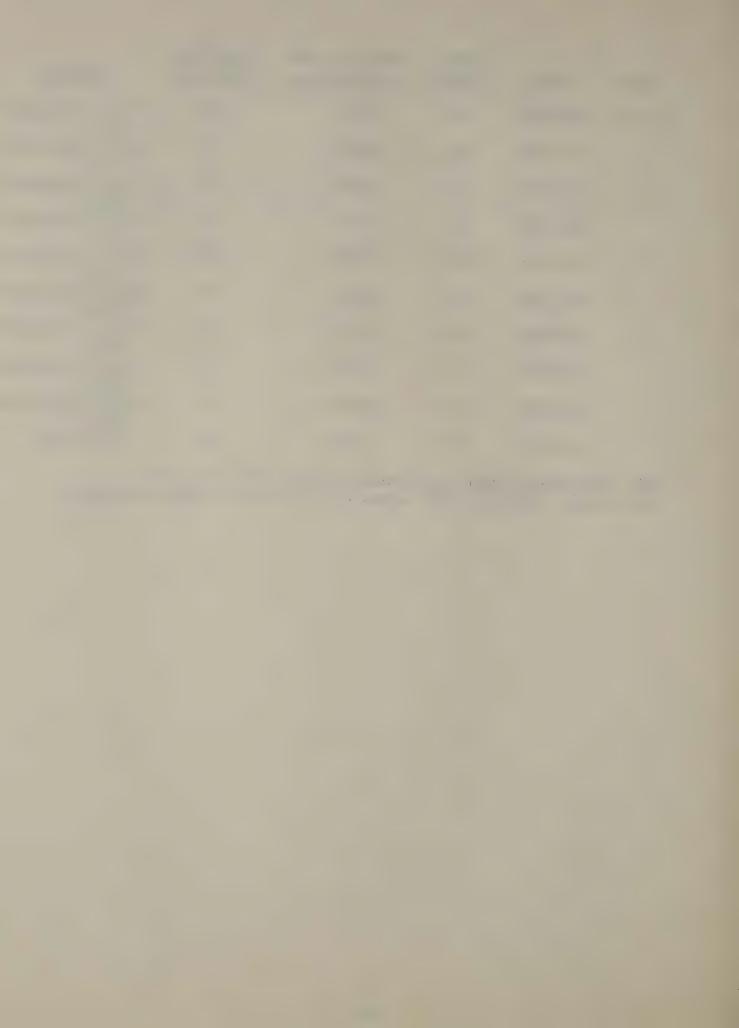
Date	Ti	ne	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Inches)	Comments
6/7/73	8:15	AM	10	proj.	0	Water Cloudy
011113	8:30		10	41 10 211	1/211	Water Clear
	8:45		10	41 10 2 11	รู้ เ	
	9:00		10	41'10'2"	1 1 1 1 1	
	9:15		20	546	As tero	Increased Pumping Rate
	9:30	AM	20	41'11½"	12"	Water Remained Clear
	9:45	AM	20	41'112''	1½"	
	10:00	AM	20	41 111 2"	1211	
	10:15	AM	30	bea	pro	Increased Pumping Rate
	10:30	AM	30	421211	2½11	Water Remained Clear
	10:45	AM	30	421211	21/211	
	11:00	AM	30	421311	211	
	11:15	AM	40	dan.	2N	Increased Pumping Rate
	11:30	AM	40	42 11 ½"	31/211	Water Remained Clear
	11:45	AM	40	4211211	31/211	
	12:00	Noon	40	4211211	3211	
	12:15	PM	50	, pane	6386	Increased Pumping Rate
	12:30	PM	50	4213211	51211	Water Remained Clear
	12:45	PM	50	4213"	511	
	1:00		50	42* 3"	511	
	1:15	PM	65	(AND	bre	Increased Pumping Rate
	1:30	PM	65	4215"	711	(Maximum Pump Capacity)
•	1:45	PM	65	421511	711	Water Remained Clear

.

the state of the s

Date	Time	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Inches)	Comments
6/7/73	2:00 PM	65	4215"	7"	Water Remained Clear
	2:15 PM	65	42 ¹ 5''	7**	Water Remained Clear
	2:30 PM	65	42 ' 5''	7"	Water Remained Clear
	2:45 PM	65	42 ¹ 5¹¹	711	Water Remained Clear
	3:00 PM	65	42 5"	711	Water Remained Clear
	3:15 FM	65	421511	7''	Water Remained Clear
	3:30 PM	65	42 5"	711	Water Remained Clear
	3:45 PM	65	4215"	7**	Water Remained Clear
	4:00 PM	65	421511	7"	Water Remained Clear
	4:15 PM	65	4215"	7"	End Test

Well disinfected and water recirculated until 5:15 PM. Additional chlorine (HTH) added and allowed to stand overnight.



CONTINUOUS YIELD TEST

Static Level During Test - 41 Feet 11 Inches Below Original Ground Pump Intake During Test - 58(+) Feet Below Original Ground

Date	Tin	<u>ne</u>	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Inches)	Comments
a ladma						
6/8/73			65	44	0	Water Rusty
	7:30	AM	65	4216"	7"	Water Clear
	8:00	AM	65	42'6"	7"	
	8:30	AM	65	42'6"	7"	
	9:00	AM	65	4216"	7''	
	9:30	AM	65	42'6"	7"	
	10:00	AM	65	42'6"	7"	
	10:30	AM	65	42'6"	7"	
	11:00	AM	65	4216"	7"	
	11:30	AM	65	4216"	7''	
	12:00			421611	711	
	12:30	PM	65	4216"	7"	
	1:00	PM	65	4216"	711	
	1:30	PM	65	421611	7"	
	2:00	PM	65	4216"	7"	
	2:30	PM	65	421611	7"	
	3:00	PM	65	421611	7"	
	3:30	PM	65	421611	711	
	4:00	PM	65	421611	7"	
	4:30	PM	65	421611	711	
	5:00	PM	65	421611	7"	
	5:30	PM	65	421611	711	
	6:00	PM ·	65	421611	711	
	6:30	PM	65	421611	7''	
	7:00	PM	65	421611	7"	
	7:30	PM	65	421611	7"	
	8:00	PM	65	421611	711	
	8:30	PM	65	4216"	711	
	9:00	PM	65	421611	711	
	9:30	PM	65	4216"	711	
	10:00		65	421611	711	
	10:30		65	421611	7"	End Pumping
	10:31		65	41 11 12 11	\$49	Recovery
	10:32		65	41 11 11	146	Recovery
	11:00		65	41'11"	344	End Test



Costello's Laboratory, Inc. Charles V. Costello Consulting Chemist

-

30 Allendale Road Binghamton, N. Y. 13903 Phone: (607) 722-0030

RESULTS OF EXAMINATION OF WATER

LAB NO
COLLECTED BY Randolph
DATE COLLECTED6/3/73
DATE REPORTED 6/12/73
NAME OF SUPPLY Hell # 1
OWNER'S NAME
ADDRESS
SAMPLING POINT Pasteld 73-1
BACTERIA PER ML 200
(AGAR PLATE COUNT AT 35°)
COLIFORM GROUP
MPN NO/100 ML less than 2.3 3K
·
THE RESULTS INDICATE THAT THE WATER WAS OF A SATISFACTORY SANITARY QUALITY WHEN THE SAMPLE WAS COLLECTED.
REMARKS:
PRO 1/11 OTAL
Charles V. Costello



SO ALLENDALE ROAD
EINGHAMTON, N. Y. 13903
722 - 0030

COSTELLO'S LABORATORY INC.

CHARLES V. COSTELLO
CONSULTING SANITARY CHEMIST

LABORATORY FOR
SANITARY & ANALYTICAL
CHEMISTRY

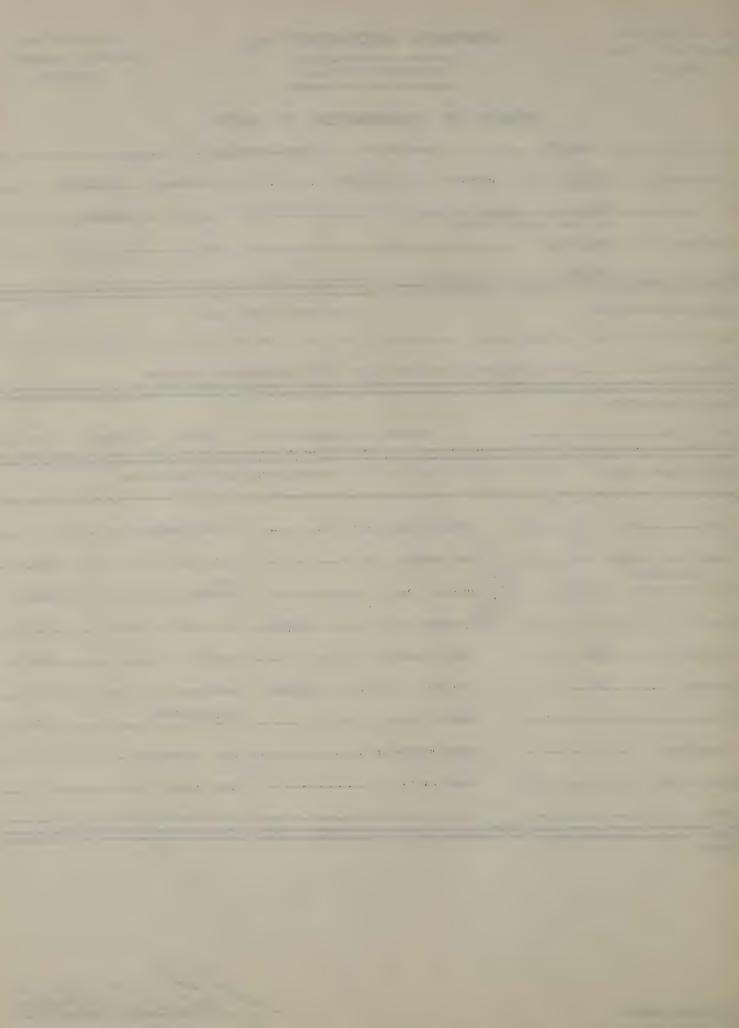
RESULTS OF EXAMINATION OF WATER

A 30 RATORY NO. C 60/73		COLLECTED BY	y Randolph
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AGE Fasteld (CITY, TOWN, VILLAGE			COUNTY Cheming
AMPLING POINT WOLL # 1			
V NER HYSDOT			TENANT
ACTERIAL EXAMINATION		TEST FOR	COLIFORM GROUP
ACTERIA PER ML. AGAR, 350C - 24 HRS		M. P. N. *	/ 100 ML
IS WATER WAS OF A SA	TISFAC	TORY SANITARY QUALITY WHEN TH	HE SAMPLE WAS COLLECTED
HYSICAL EXAMINATION			
CLOR 2		TURBIDITY 2	ODOR + COLD Veg. + HOT
IEMICAL EXAMINATION		RESU	JLTS IN PARTS PER MILLION
)N (Fe)		AMMONIA FREE (AS N)	OXYGEN CONSUMED (O)
NGANESE (MN) — Neg-	175	ALB. AMMONIA (AS N)	CHLORIDES (C1)
AS Rec'd ARBON DIOXIDE (CO2)	NITROGEN	NITRITES (AS N)	TOTAL HARDNESS (AS CACO3) 168
DURIDES (F)	CONS	NITRATES (AS N)	95 ALKALINITY (AS CACO3) 123
CTAL SOLIDS		LOSS OF IGNITION	CALCIUM (AS CACOS)
:ARBONATES 201		SULFATES	30 MAGNESIUM (AS CACO3)
ICA		COPPER	ELECTROMETRIC 7.2
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CHARLES V. COSTELLO

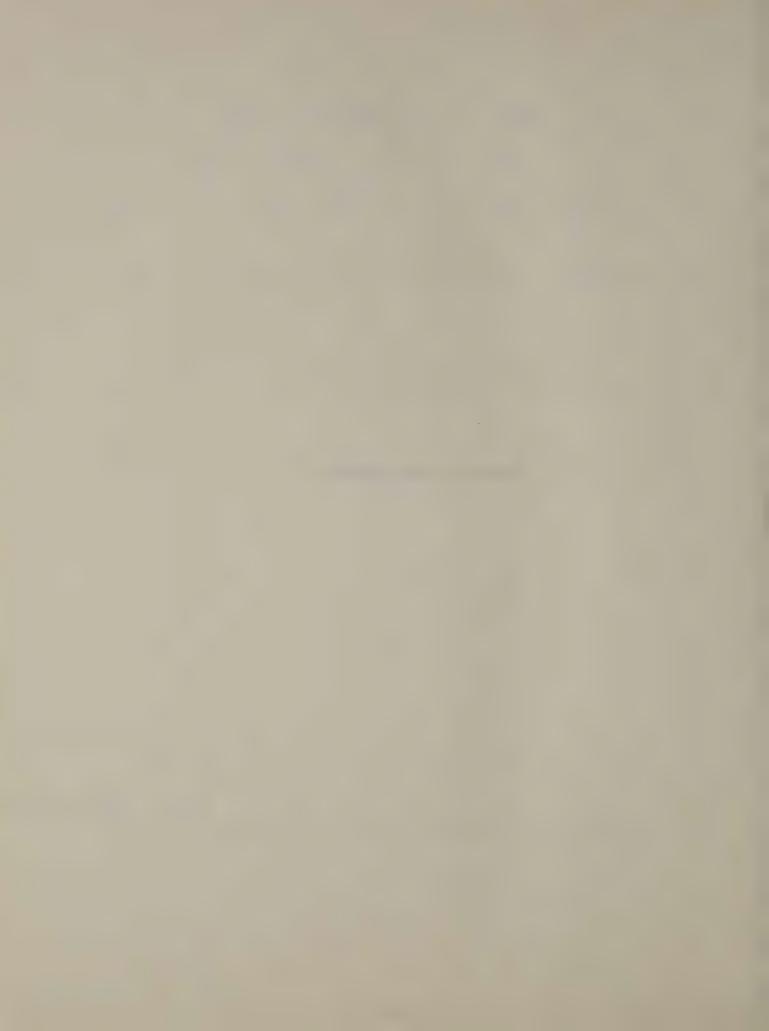


INDEX OF SAND ANALYSIS

Randolph Well & Pump Co.

5/17/73

Well No. 1 for State of N.Y.



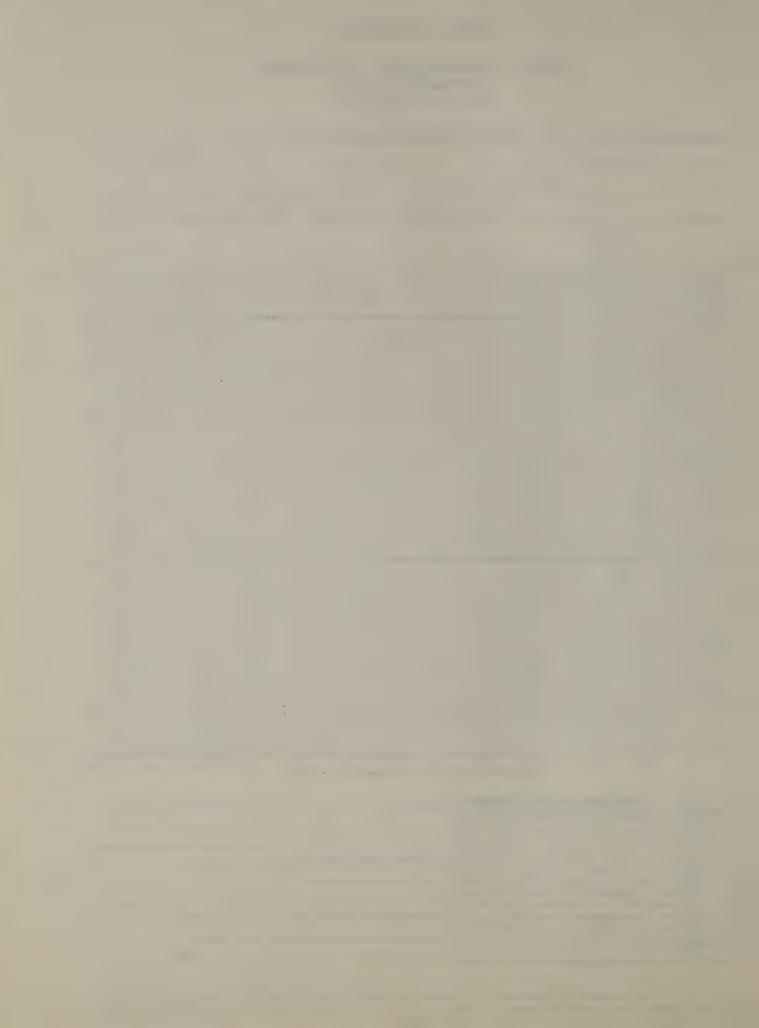
SAND ANALYSIS

UOP JOHNSON DIVISION

315 North Pierce Street Saint Paul, Minn. 55104

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CUMULATIVE PER CENT RETAINED



SAND ANALYSIS

UOP JOHNSON DIVISION

315 North Pierce Street Saint Paul, Minn. 55104

Saint Faul, within 55104
Sample sent in by Randolph Well & Pump Co., Inc.
Town Cortland State N.Y. Date 5/17/73
From Well No. 1 for State of New York at Lowman Route 17
Remarks Contract No. Fasteld 73-1 57702 (Rest Area)
The state of the s
20 40 50 80 100 120 140 - 130 180 200 220 340 230 23 SLOT OPENING AND GRAIN SIZE, IN THOUSANDTHS OF AN INCH
SIEVE CUMULATIVE PER CENT RETAINSO Notes:
OPENINGS 67 60 60-70
.094
.096 64 54 40 Recommended Slot Opening:
Recommended Screen: Dia. in, Length Ft.

80

70

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SCHEEN .0 5 6



SAND AWALYSIS

UOP JOHNSON DIVISION

315 North Pierce Street Saint Paul, Minn, 55104

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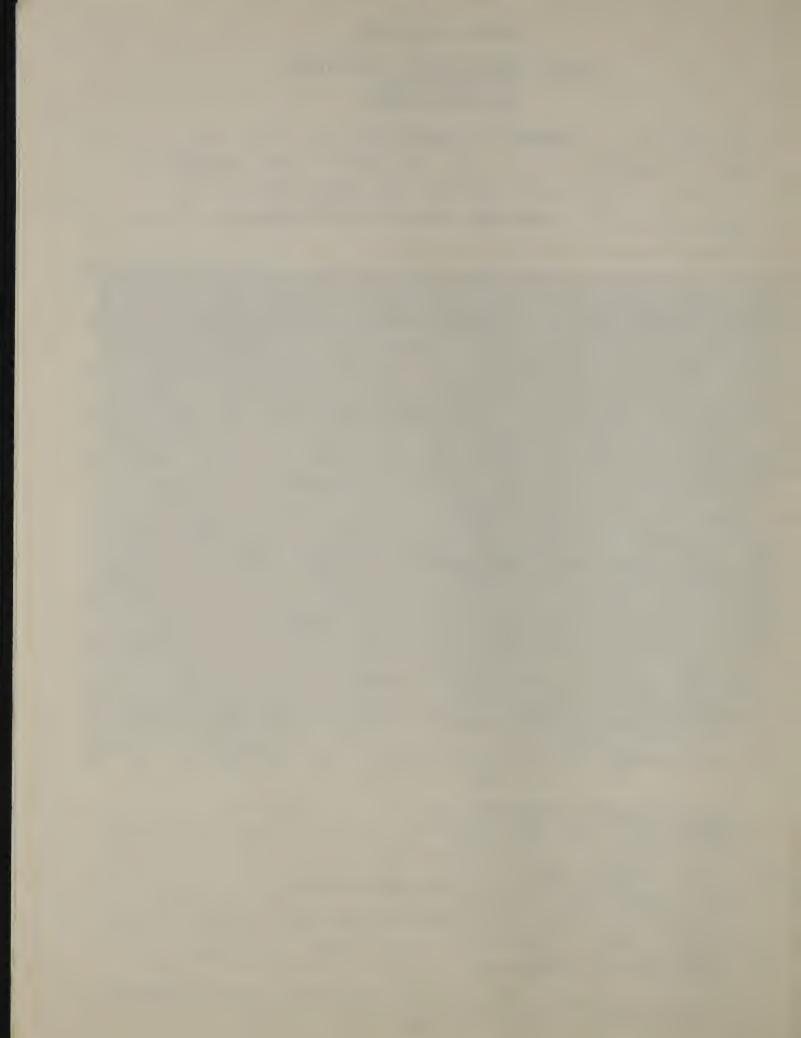
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Town	Cortlar	nd		on the speciment of the specimen of the specim	State	N.Y	N.Y.		5/17			
from tvall of	\	Well No.	1 for Stat	te of N	lew Yor	k at L	cu man	Route	17		an one other springs	
Remarks		C	ontract N	o. Fas	steld 73	-1 57	702 (1	Rest Ar	ea)			
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SIEVE	CUMULATI	VE PER CENT	RETAINED	Notes:	ч 9 го арын дагч чубира кардыран, каладараныд а	The sea for one source assessment	annes de la company de la comp	artina a may aris i arisi dalabahin kan a mili mandinga da mada an	a status a marinda de la companya de	The state of the s	197-d +1 Бабыйшабт т. «А артроптада	
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10+2 Cortland, N. Y. er's Name DIPT OF TRANSPORTATION Address LOWMAN, N. V-Pte No.FA . 10 73-1 Size of Well 6" Mach. No. 10 SANDORM. Sec lest Sheet Down Total Depth in Feet Starte MAY 7-1973 Date Completed FORMATION AND REMARK 0-5 ft - Dry Gravel - Dry Gravel - Dry Gravel - Dry Gravel 15-20 - Dry Gravel Dry Gravel 30-35 - Grand sand & clay Dry general + little chay time soult gravel, first water 48 - Fine sand + gravel, some Water Fine sand + gravel, 6 ypsm 49 Very good gravel, 8 gpm, St. - 47' 51 - Some gravel - S.L. 43' 53 - gard gravel - 10 gpm - S.L. -42' 56 - grad gravel - 10 gpm - 5.L - 43' 58 - good fine sand & yeard - S. L 43' 60 - fine sand heaves in pipe 62 64 nice line quely said heaves in bins 67' - still herves in pipe - Shut dot woff-pulled the to get son 696 - fine son fine + Coonse grand 70' - fine sand large gravel- bailed 30 CPM - sand & growel - fine to way Come 731 - Very fine sand + silt some large stone 74' - Very fine sand + silt, some le cot. - Very fire sand silt, sems love it were 78-79- sand + grand & clay 79-80 - Hardpan some france 80-81/2-Hand pan water 71/2-CPM Filled bottom Wy bank nun gravel & pulled Casing back 1670

A-12

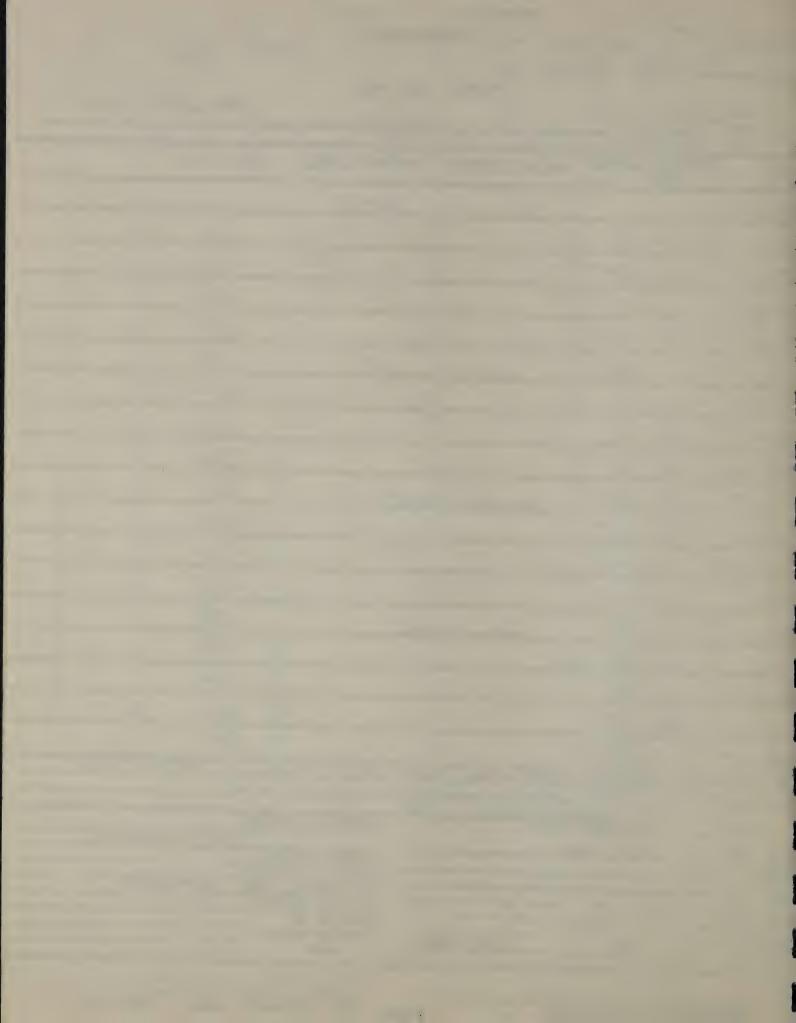
RANDULPH WELLE TUNE GO. Contract st furties 73-1 R. D. 4, CORTLAND, N. Y. Sheet 1 of2 masusmuta loken 4" about G. L. RECORD OF TEST Well 19. 1 Date 6-7-73 For helt of Transportation - State of new york PUMPING LOVEL METER READING G. P. M. 8:00 4216" 9:15 42 6/2" 10 8:30 42'6/1" 42/6/2 119:00 42'612" 42' 634" 9:15 20 20 9:45 42' 71/2 20 42' 7/2 10:00 110:15 42171/2" 30 92' 81/2" 30 10:30 42 8/2 30 421 91/2" 30 11:00 42 8/2 40 421 91/2" 40 11:30 7:191/2" 40 11:45 42' 91/2" 12:00 40. 50 _12:15 rigine or motor used: 3-H.P. Goulds Submersible # 41 M30412 ke & size OF PURP USED SIZE OF PULLEY SIZE OF PULLEY -3 505 - W30412 INCH ORIFICE WIDEN OF WEIR DEPTH AIR LINE AIR PRES. WHEN NOT PUMPING DISCHARGE PET OF STREET 571 Height of gauge above

WITLESS FOR PURCHASER

A-13

Kay Kandalph

FOR: RANDOLPH WELL & PUMP CO.

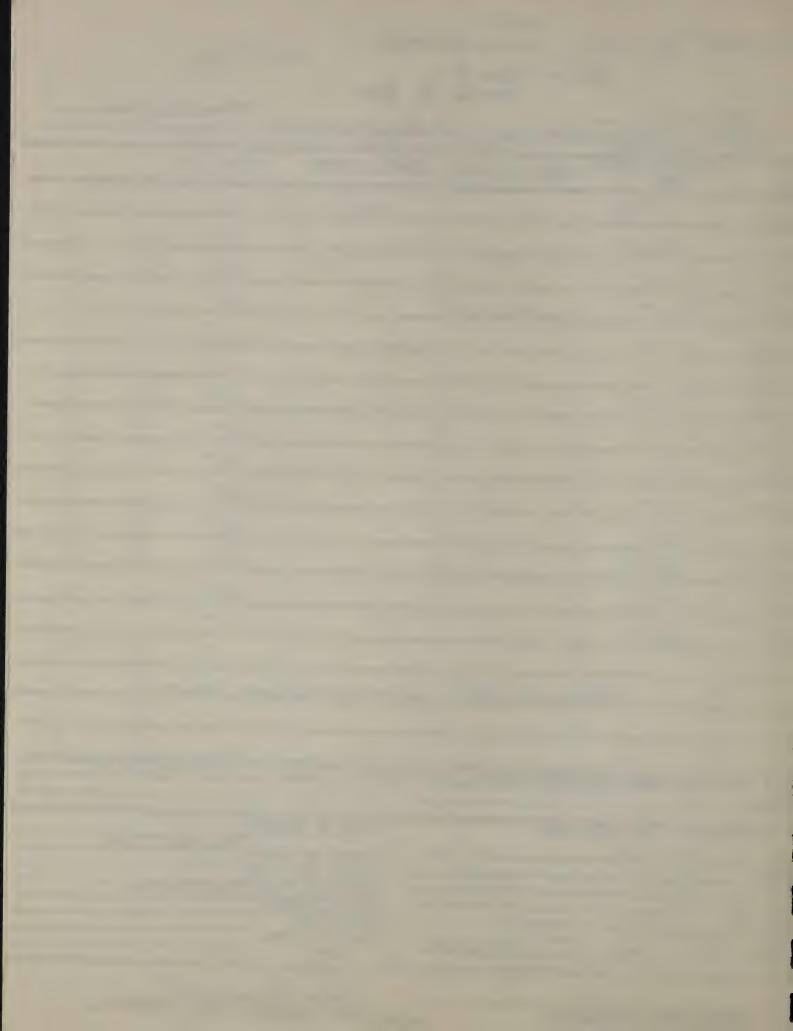


Contract " fasteld 73-1 R. D. 4, CORTLAND, N. Y. Sheet 2 1/2 Pipe 4" about G.L. RECORD OF TEST Well Located At Transportation - State of The Well Located At Transportation - State of The Well Located At Towns In J.

FUNDING LIVEL METER READING STATIC LEVEL Date 6-7-73 G. P. M. 42'11/2 426" 12:30 3:45 50 42'11" 1:00 42'11" 50 42 11" 65 mentarial 1/130 65 43' 1" 1145 43' 1' 65 13:00 43'1" 65 2115 43' 1" 65 43'1" 65 43' 1" 65 13:00 65 43'1" 3:15 113:30 65 431" 43'/" 3:45 65 117:15 63 4311" Chlorinate Well and re-cyclel for I have The & size of engine or motor used: 3-N.P. Goulds Submersible # UT BM 30412 DESCRIPTION OF PUMP USED SIZE OF PULLEY Gould Such INCH CRIFICE ON MADIM OF WEIR DEPTH AIR LINE AIR PRES. WHEN NOT PUMPING SCATIC LEVEL ISCHARGE. Height of MI OF SETTING 34 gauge above

WITHESS FOR PURCHASER

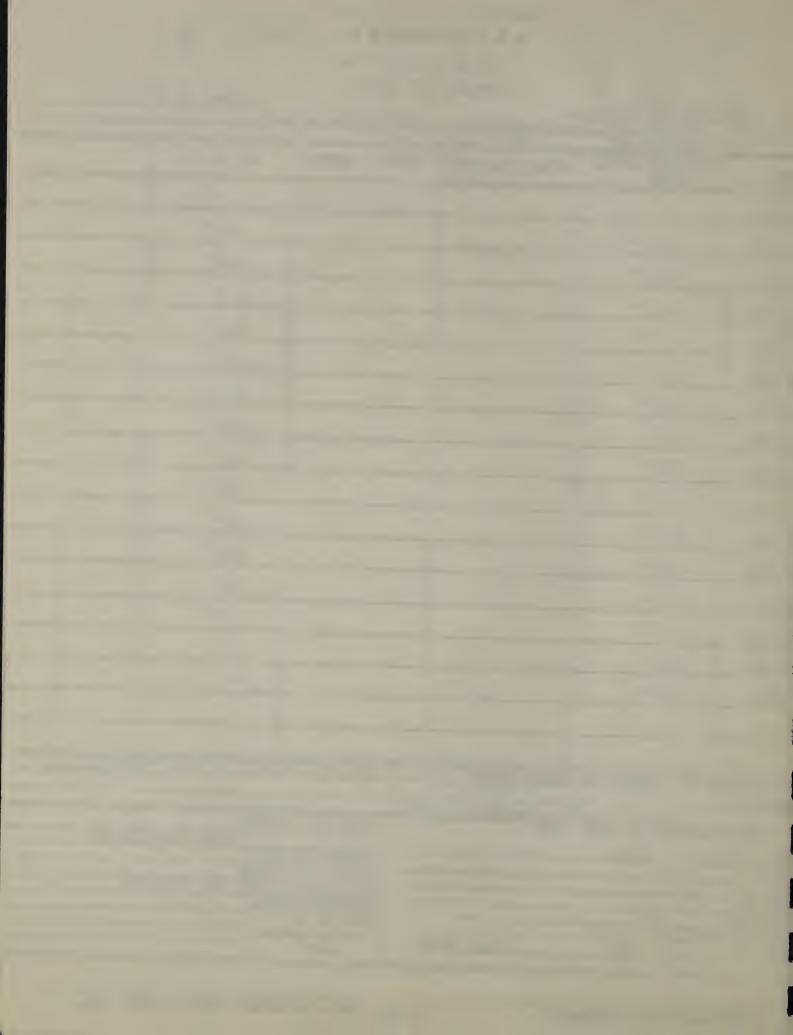
Tay Kandolak A-14 FOR: MANDOLPH WELL & PUMP CO.



R. D. 4, CORTLAND, N. Y. Sheet 1 of 2

16 hr pump Test

	Wel For	1 :10. 1 Part of 2	PECOND	OF TEST	v york Date 6-7-73				
		1 Located At FUMPING LEVEL	7-01:3144	11:4	(D 11				
	IE .	PEST	METER READING	STATIC LEVEL	G. P. M.				
	7:00			42'7"					
	7:15	43'1"			65				
1.4	7:30	43'1"			65				
	7:45	43'1"			65				
	8:00	43'/"			65				
	9:00	43'1"			65				
	10:00	43'1"			65				
	11:00	43'1"			65				
	12:00	43'1"			65				
	1:00	437"			65				
E 2005	2:00	43'/"			65				
. 1 da w	3:00	43'1"			65				
711		432/11			65				
	4:00 5:00	43'/"			65				
	6:00	43'/"			65				
	7:00	43111	ř		65				
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1377	e & siz	e of carine or n	notor used: 3-	H.P. Goul bs Su	ibmersible # 4TM3	30412			
	DESCR	IPTION OF PURP	ISED	GIZE OF PU	LLEY				
7.5	E Gast	et, Sut		WIDEN OF W	INCH ORIFICE ON				
13		6"		DEPTH AIR		teriorien dates de teriorie proporti, ceritaring personal consideration de la consider			
4	CHARGE	3		STATIC LEVI	The state of the s				
1:0	OF SI	a" FT.	INCH PIPE	gauge above	V0				
*****	т с чен филь, . Естопольные общение фильерай								

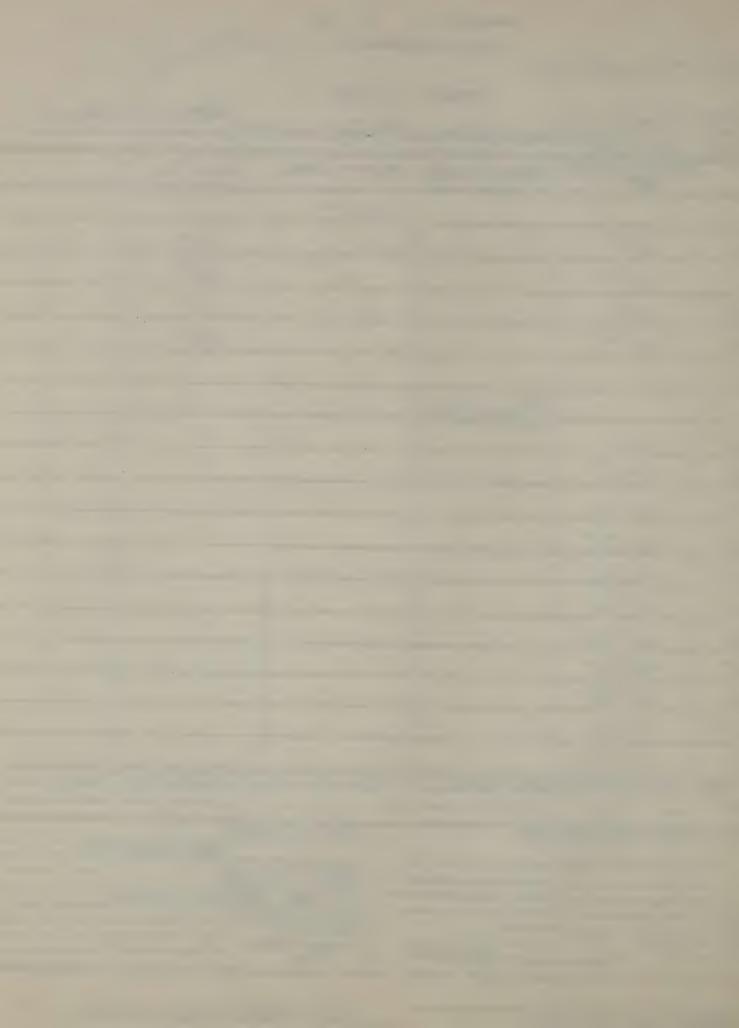


Contract # fas Tild " 73-1

R. D. 4, CORTLAND, N. Y. Sheet 2 of 2

RECORD OF TEST Well Located At Transportation - State of men york Well Located At Transportation PUMPI'G LIVEL METER READING STATIC LEVEL G. P. M. TE PEST 42'7" 1.00 43'1" 65 65 1:00 4311" 0:00 43'1" 65 43 /1 65 0:30 Becovery 451" 42'712" 10:32 4217/2 4517%" 10:33 0;34 42 712 10:35 42'71/2" 0:40 42 71/21 42' 7/2" 10:45 42' 7/2" 0:50 0:55 42 71/2" 42' 71/2" 11:00 e & size of engine or motor used: 3 H.P. Goulos Submersible pump "utm 30 412 larks: TESCRIPTION OF PURP USED SIZE OF PULLEY

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ibmer sible	INCH ORIFICE ON
(' / /)	WINDAM OF WEITH
The state of the s	DEPTH AIR LINE
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CHARGE 2 /	SCATIC LEVEL
MI OF SIMPING 57"	Height of
PTOY FT. THEN PIPE	gauge above
199 To the transport of the second of the se	vase
TO THE PROPERTY OF THE PROPERT	The state of the s



APPENDIX B

WESTBOUND REST AREA-TEST WELL NO. 2



LOCATION

Centerline Station: WB 117+55

Offset: 273 Feet Left

Original Ground Elevation (0.G.): 832.6(+)

DRILLING DATA

Contractor: Randolph Well & Pump Co.

Driller: Fran Haynes
Date Starter: 5/10/73
Date Completed: 5/16/73

WELL DATA

Source of Water: Granular Material

Overburden: Sand & Gravel

Static Level During Drilling (Water Table): 41 to 42 Feet

Depth of Well: 73 Feet

TEST DATA

Date Started: 6/1/73
Date Completed: 6/6/73

Location of Pump Intake: 58(+) Feet

Static Level During Testing (Water Table): 42(-) Feet

Yield: 65 Gallons Per Minute Drawdown: 4 Feet 4 Inches

Specific Capacity: 15(+) G.P.M. Per Foot of Drawdown

PUMP DATA

Make & Type: Goulds 3 HP Submersible-Model UTM 30412



WELL LOG	WELL DETAILS
	Top of Casing
	Elevation - 835.0
	Original Ground Surface (0.G.)
Regraded Natural Material	Elevation 832.6
(Sand & Gravel)	Drawdown, Pumping Rate-65 G.P.M.
	Depth 4 Feet 4 Inches-Elev. 828.3(+
Sand	
δ Gravel	
Graver	
0 To 30 Feet	
Clay, Silt	
Sand & Gravel	Static Level During Testing
00 M F/ T	Depth 42(-) Feet-Elevation 790.6
30 To 54 Feet	
· ·	
	Pump Intake During Testing
	Depth 58(+) Feet-Elevation 773.6
Sand	Bottom of Cocine Ton of Co
&	Bottom of Casing-Top of Screen Depth 60 Feet-Elevation 772.6
Gravel	Depart of Leet Blevacion 772.0
54 To 70 Feet	
	Bottom of 10 Foot Well Screen
Silt, Sand & Gravel 70 To 73 Feet	Depth 70 Feet-Elevation 762.6 *Bottom of Drilled Well
/0 10 /3 reet	Depth 73 Feet-Elevation 759.6

^{*}Well backfilled from 73 to 70 feet with bank run sand & gravel



STEP DRAWDOWN TEST

Static Level During Test - 41 Feet 10 Inches Below Original Ground Pump Intake During Test - 58(+) Feet Below Original Ground

Date	Tin	<u>ne</u>	Rate (GPM)	Dynamic Leve (Feet)	Drawdown (Feet)	Comments
6/1/73	8:30	AM	10	**	0	Water Cloudy
	8:45	AM	10	4216"	811	Water Clear
	9:00		10	421611	811	
	9:15		10	421611	811	
	9:30		15	649	•	Increased Pumping Rate
	9:45	AM	15	421811	10"	Water Remained Clear
	10:00	AM	15	421811	10"	
	10:15		15	421811	10"	
	10:30		20	•		Increased Pumping Rate
	10:45	AM	20	421811	112"	Water Remained Clear
	11:00	AM	20	4310"	112"	
	11:15		20	43'0"	1 ' 2"	
	11:30		25	989	Dia.	Increased Pumping Rate
	11:45	AM	25	4313"	1'5"	Water Remained Clear
	12:00	Noon	25	431311	1'5"	
	12:15	PM	25	431311	1 ' 5"	
	12:30	PM	Pump mal		opped test for	e-unsuccessfully, repairs.
6/5/73	1:00	PM	25	New static below 0.G.	level 41'11"	Continue Test
	1:15	PM	25	4315"	1'6"	Water Clear
	1:30	PM	25	4315"	1'6"	
	1:45		25	4315"	11611	
	2:00		37.5	··	-	Increased Pumping Rate
	2:15	PM	37.5	4412"	213"	Water Remained Clear



Date	Time	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Feet)	Comments
6/5/73	2:30 PM	37.5	4412"	21311	
	2:45 PM	37.5	441211	213"	
	3:00 PM	48.5	-	-	Increased Pumping Rate
	3:15 PM	48.5	45 2211	313211	Water Remained Clear
	3:30 PM	48.5	45' 25"	313511	-
	3:45 PM	48.5	45' 25"	31 3211	
	4:00 PM	65	-	esb	Increased Pumping Rate
	4:15 PM	65	46 1 2 2 1 1	4134"	(Maximum Pump Capacity)
	4:30 PM	65	46 1 3 2 11	414211	Water Remained Clear
	4:45 PM	65	4613211	414311	
	5:00 PM	65	46 1 3211	414211	End Test



CONTINUOUS YIELD TEST

Static Level During Test - 42.0 Feet Below Original Ground Pump Intake During Test - 58(+) Feet Below Original Ground

Date	Time	<u>e</u>	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Feet)	Comments
6/6/73	7:00	AM	65	grap	0	Water Rusty
-, -, -	7:15		65	4614"	41411	Water Clear
	7:30	AM	65	461411	41411	
	7:45	AM	65	461411	48411	
	8:00	AM	65	461411	41411	
	9:00	AM	65	4614"	4 411	
	10:00	AM	65	461411	41411	
	11:00	AM	65	46 3 3 11	413211	
	12:00	Noon	65	4613211	413211	
	1:00	PM	65	4614"	41411	
	2:00	PM	65	4614"	41411	
	3:00	PM	65	461411	41411	
	4:00	PM	65	461411	4 ! 4 ! ?	
	5:00	PM	65	46! 411	41411	
	6:00	PM	65	4614"	48411	
	7:00	PM	65	4614"	41411	
	8:00	PM	65	461411	41411	
	9:00	PM	65	461411	41411	
	10:00	PM	65	461411	41411	
	10:30	PM	65	4614"	41411	End Pumping
	10:31	PM	944	4212"	BMS	Recovery
	10:34	PM	2148	42'1 3/4"		Recovery
	10:45	PM	-	42112"	000	Recovery
	10:55	PM	gains .	42114"	-	Recovery
	11:00		***	42114"	000	End Test



Costello's Laboratory, Inc. Charles V. Costello Consulting Chemist 30 Allendale Road Binghamton, N. Y. 13903 Phone: (607) 722-0030

RESULTS OF EXAMINATION OF WATER

LAB NO.	262/73
COLLECTED BY	y Rantolph
DATE COLLECTED	6/6/73
DATE REPORTED	6/12/73
NAME OF SUPPLY	Rest Area Well # 2
OWNER'S NAME	-N-YSEXOT
ADDRESS	
SAMPLING POINT	Well # 2 Test Pump
BACTERIA PER ML	30
(AGAR PLATE COUNT A	7 35°)
COLIFORM GROUP	
MPN NO/100 ML	less than 2.2 OK
••••	
THE RESULTS INDICATE	THAT THE WATER WAS
REMARKS:	
***************************************	(1) 0 11 19 AM
	(Melest Cells
	Charles V. Costello



30 ALLENDALE ROAD BINGHAMTON, N. Y. 13903 722 - 0030

COSTELLO'S LABORATORY INC.

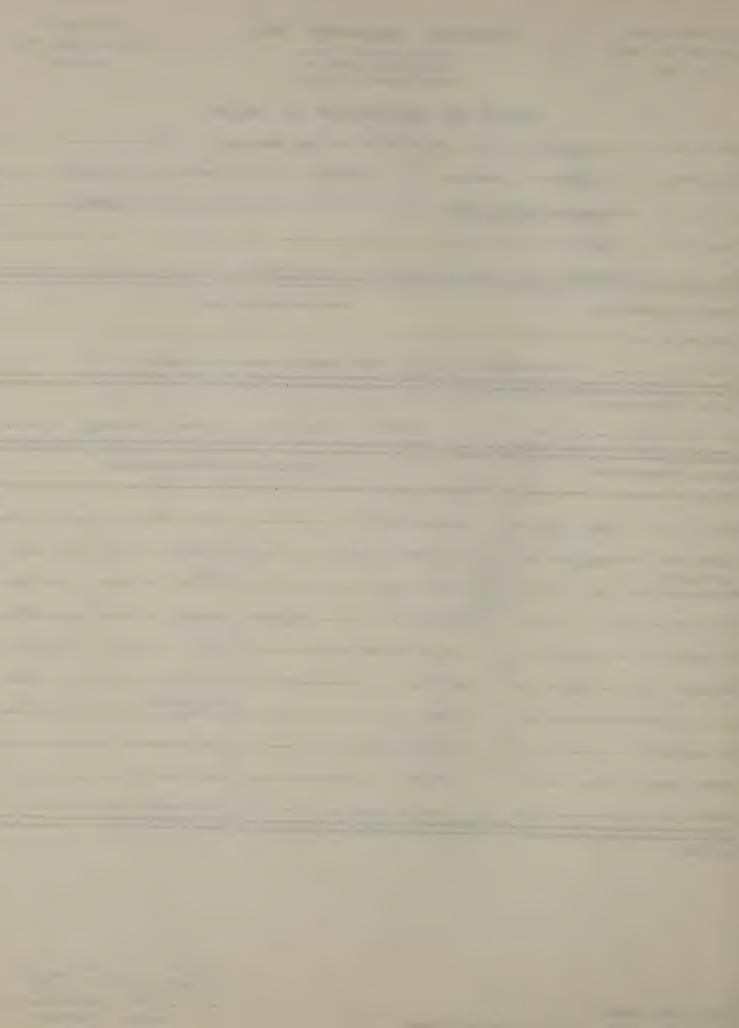
SUCCESSOR TO NELSON & LAUDER CHARLES V. COSTELLO CONSULTING SANITARY CHEMIST LABORATORY FOR
SANITARY & ANALYTICAL
CHEMISTRY

RESULTS OF EXAMINATION OF WATER

ABORATORY NO. C.	61/73	The in the testing of the last of the contract of the	COLLECTED BY Ray Rando	lph	
ATE COLLECTED	6/7/73	REC	6/7/73	REPORTED 6/12/73	
LACE	Contract Fast	eld .	72 1	COUNTY Charing	
AMPLING POINT	Well # 2	OR HA			
WNER	NYS DOT		TENANT		
BACTERIAL EXAMINA	TION		TEST FOR COLIFOR	M GROUP	
HACTERIA PER ML. AGAR	R, 350C - 24 HRS		M. P. N. * / 100 M	L -	
HIS WATER WAS	OF A SAT	ISFACT	ORY SANITARY QUALITY WHEN THE SAMPLE	E WAS COLLECTED	
PHYSICAL EXAMINAT	ION				
COLOR — 2			YURBIDITY 2	ODOR + COLD_Veg. +	HOT
CHEMICAL EXAMINAT	TION		RESULTS IN	PARTS PER MILLION	
RON (FE)	.06		AMMONIA FREE (AS N)	OXYGEN CONSUMED (0)	
ANGANESE (MN)	neg.	SLZ	ALB. AMMONIA (AS N)	CHLORIDES (C1)	23
ARBON DIOXIDE (CO2)		NITROGEN	NITRITES (AS N)	TOTAL HARDNESS (AS CAGOS)	155
LOURIDES (F)		CONS	NITRATES (AS N)	ALKALINITY (AS CACO3)	97
OTAL SOLIDS	231		LOSS OF IGNITION	CALCIUM (AS CACO3)	130
HCARBONATES	116		SULFATES	MAGNESIUM (AB CACO3)	25
HLICA			COPPER	ELECTROMETRIC PH VALUE	7.4
OTAL PHOSPHATES			ORTHO PHOSPHATES	META PHOSPHATES	
JUSPENDED MATTER			TEMPT AIR ° F	TEMPT WATER °F	
DETERGENTS					The Control of the Co
DESCRIPTION OF THE PROPERTY OF THE PARTY OF					The State of the S

REMARKS:

Charles V. Costello

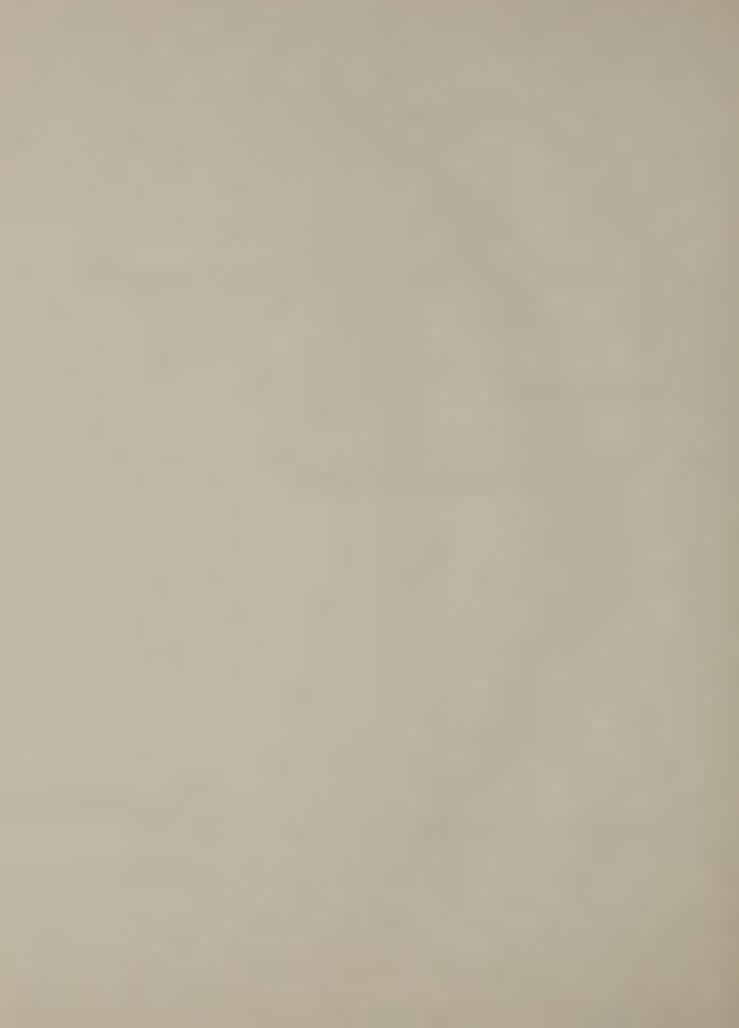


INDEX OF SAND ANALYSIS

Randolph Well & Pump Co.

5/17/73

Well No. 2 for State of N.Y.



SAND ANALYSIS

UOP JOHNSON DIVISION

315 North Pierce Street Saint Paul, Minn, 55104

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Sa Sa	iint Paul, Minn. 55104
Sample sent in by Randolph \	Well & Pump Co., Inc.
Town Cortland	State N.Y. Date 5/17/73
From well of Well No. 2 for	State of New York at Lowman Route 17
Remarks Contract No	. Fasteld 73-1 57702 (Rest Area)
	,
	5
SLOT OPENING AN	120 140 130 130 230 220 240 260 280 ND GRAIN SIZE, IN THOUSANDTHS OF AN INCH
U, S.	D Notes:
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.034 / E 4 .065 22 9	Recommended Slot Opening:
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016 62 62	Recommended Screen: Diain. LengthFt.
SCREEN SLOT - 00 - 9/ 90	



SAND ANALYSIS

UOP JOHNSON DIVISION

315 North Pierce Street Saint Paul, Minn, 55104

		Ocini	it tadi, Willin. 55104
Sample sent	t in by	Randol	Iph Well & Pump Co., Inc.
,			State N.Y. Date 5/17/73
			te of New York at Lawman Route 17
			Fasteld 73-1 57702 (Rest Area)
Remarks		11001 140. 1	184 31014 70 7 37702 (Ness 71104)

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SAND ANALYSIS

UOP JOHNSON DIVISION

315 North Pierce Street

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SLOT .045-

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SIEVE CUMULATIVE PER CENT RETAINED Notes:	20 40	60	80 100	120 140	160	-	- incremental designation of the last	and commented to the sign of a subsequent to the	mitalian amount much equiption	50 2
07ENINGS			SLOT OPENING AT	ND GRAIN SIZE, IS	N THOUSANDT	HS OF AN IS	ICH .			
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.094 2.9 4.5	.250					eligiorialismo distinuo dissa array filologica accidido es tal Tra e tandade altro de se de seguina de se tra consecuente de se es es establismo de se establis	in men annantifation (the state of the state			Barthoper Royalbagers Generalis
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Recommended Screen: Dia in Length Et	.047	53, 7		Recomi	mended S	Slot Oper	ning:	Market per server handles de la Market de la Company de la	alline and the second s	nate state additional areas and
14/6 1 71/1 6.2		74.	75	Recomi	mended S	Screen: E	ia	in. Len	gth	manuscript for t.
SCREEN OF 5-93 By:	SCREEN	69	50	gan-timburganianananan	er senning skyrrilgin oppgjelingsgelik enter – v gyggelik			and the second section of the second section of	Rv.	Market Anadore de Alliques



DRILLER'S LOG

RANDOLPH WELL & PUMP CO., INC. Cortland, N. Y. -Invoice No. WELL #2

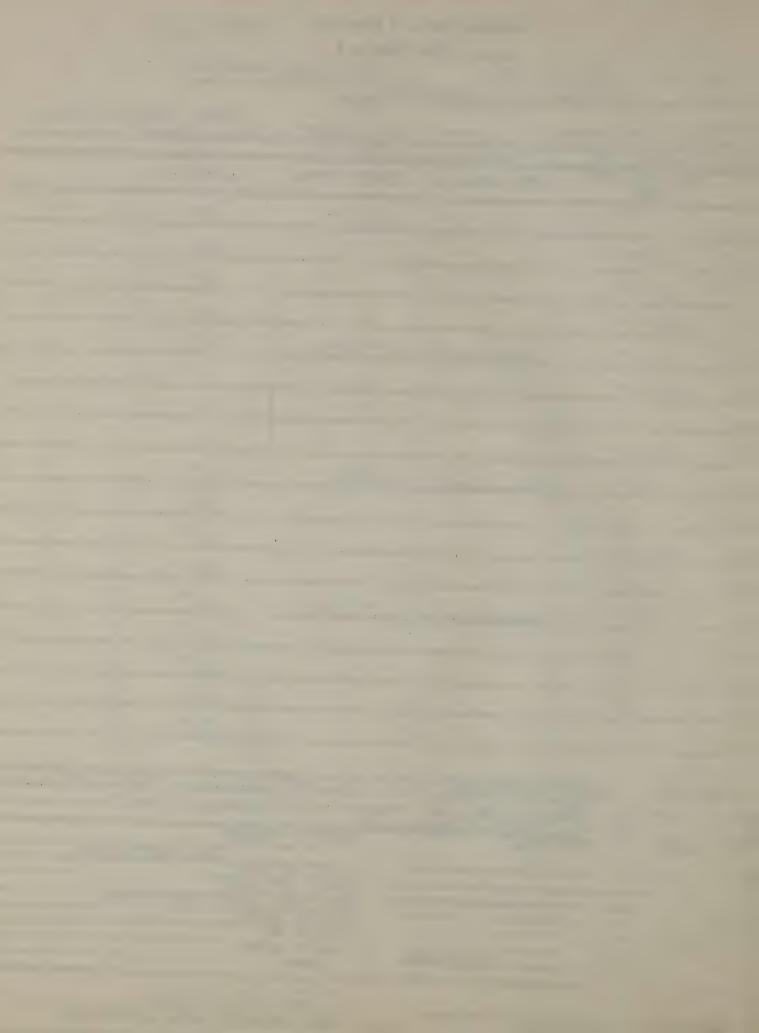
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ner's N	ame DE	p't of	- TRANSPORTATIONALDIES LOWMAN N.Y RTE	17
ract No	· FAST	ELD 73	-1Size of Well 6" Mach. No. 10 Driller HAY	NE
GRA	WEL-S	AND GI	P.M. SEE TEST Sheet Draw Down Total Depth in Feet	
Start	ed MA	Y 10 - 19	Date Completed	
NG	ROCK DRILLED	GASOLINE IN GALS.	FORMATION AND REMARKS	
			0-5ft Dry gravel	
			5-10 - Dry gravel	
			10-13 - Houf gravel	
			15-20 - Way gravel	
			20-25 - Dry gravel	
w			25-30 - Boulder fine of medium gravel - some clay	
			30-35 - sand, gravel & clay Balls	
A TANK BENEVIAN PROPERTY.			35-40 - Dand, fine + Coarse gravel, Gravel pan	
			\$0-45 - sand, growel, hard pan	
			45-50 - sand, gravel, hard pan	
			50-54 - sand, gravel, kand pan	
VB-days specialized secretary via			55-60 - Water, sond & grand - Static Level- 48	/
and the second section of the section of the second section of the			61 - Water, Static level-41', cand of gravel	
			63' - water, Static level - 42', soul + gravel	
			65' - sand & Coarse gravel - Water	alliances of the freeze
			67-68 - sand & Cooras gravel - Water	
			70-72 - Sandvery silty-	

MARKS:



RANDOLPH WELL & PUMP CO. SHeet 1 of 2 R. D. 4, CORTLAND, N. Y. STEP DRAW DOWN test Control & FASTELD 73-1 measuremento to hentopy Caring GECOND OF TEST Date 5-31-73 Well Located at Ferman 11.4 Date 5-PUMPING LIVEL METER READING STATIC LEVEL G. P. M. 130 42'1" 10 45 431 911 100 42'9" 10 42 9" 7:15 moneared to 15 OPM. 15 1:30 42'11" 15 1:45 42' 11" 1:00 4 . 11 " 15 42'11" 11:15 inculared to 15 DPM. 13:30 43'3" 1,45 4.1311 20 20 13 3" 1:00 13 8" 20 25 inmoved to 25 GRM. 4 3 / 11 1:30 25 1145 136 25 7:00 1/3 " 25 12:15 456 25 2:30 3 & size of eighe or motor used: 3- H.P. Goulds Submersible #UD64HH12-817, ALL STATE C PULP USED SIZE OF PULLEY

INCH ORIFICE ON MEDIN OF WELL DEPTH AIR LINE
AIR PRES. WHEN NOT PUMPING
STATIC LEVEL
Height of gauge above base



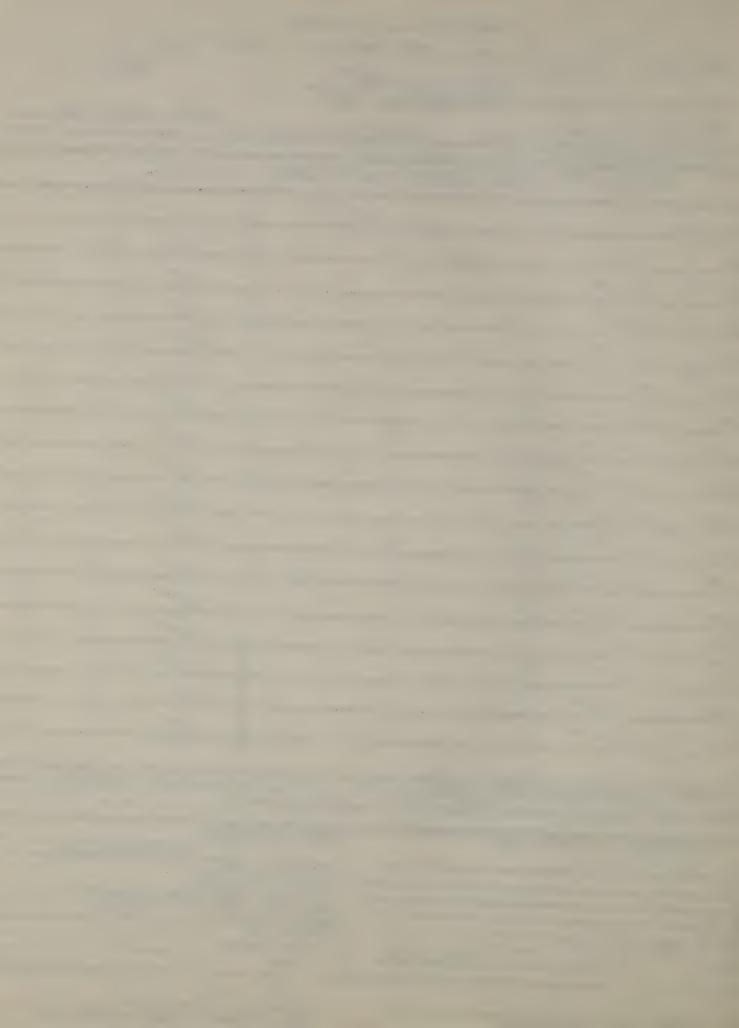
RANDOLPH WELL & PUMP CO. Sheet 2 of \$ 2 R. D. 4, CORTLAND, N. Y. CENTRACT TRASTELD-73-1 Step DRAW Down tost measurement, token top of Caving 9 RECORDS OF TEST Date 6-5-73 For Frent 16 Trompertation - Stil of men york Well Lobated At Townson 11. ye PUMPING LOVEL METTER READING STATIC LEVEL G. P. M. 1:00 25 4218" 44'2" 1:15 25 441 2" 25 1:30 3:1/2 : :00 4'2" moreases 371/2" 44'10/2" 1115 44 11" 371/2." 1:30 11:45 44'11" 37/2" 45'11%" 11:00 481/2" 45'1112" 48 1/2" 3115 3;30 45'11/2" 48/2" 48/2" 13:45 65 1:00 65 1:15 65 1130 1:45 65 65 1:00 end of 8 he Step draw Rown test e & size of ongine or motor used: 3- H.P. Coulds Submersible #41 M30412 DESCRIPTION OF PURP USED SIZE OF PULLEY IS SUB PUZZP WIDTH OF WEIR DEPTH AIR LINE AIR PRES. WHEN NOT PUMPING STATIC LEVEL Height of THE OF SETTING 59' gauge above

WITHESS FOR PURCHASER

B-14 FOR: RANDOLPH WELL & PUMP CO.



mica	TRACT IT PASTE Semant to furtopy 1 70. 1 Located At	16 hr. prom Casing 9"480486616	of TEST	heet 1 of \$2 h Date 6-6-73			
IE	PUMPING LUVEL	METER READING	STATIC LEVEL	G. P. M.			
1:00 A	M.		42'9"				
1:00				65			
1:15	47'/"			65			
7:30	47'1"			65			
1:45	47'1"			65			
7:00	47'1"			65			
9:00	77'1"			65			
0:00	47'1"			65			
1:00	-17'1"			65			
2:00	47 1/2"			65			
1:00	47'1"			65			
2;00	47.1"			65			
3100	47'1"			65			
4:00	47'1"		·	65			
5:00	47'1"			65			
6:00	47'1"			65			
7:00	47'1"			65			
e & sizo arks: 0	e of engine or r	notor used: 3-	A.P. Coulds Sur Cotive pro-As	mersible # UTM304	/2_		
E Sul CES P No. CHANGE	IPTION OF PURP 1 8 6" 3 2" TITIO 59 FT.	USED INCH PIPE	MIDEN OF WE DEPTH AIR I AIR PRES. W STATIC LEVE Height of	gauge above			
WITH	ESS FOR PURCHASE	GR E	3-15 FOR: RANDO	Randolph LPH WELL & PUHP CO.			



SHeet \$ of 2 RANDOLPH WELL & PUMP CO. R. D. 4, CORTLAND, N. Y. 16 Hr. Panys TEST. RECORD OF TEST Transportation - State of new york Date 6-6-73 Well Located At G. P. M. METER READING STATIC LEVEL 3:00 47'1" 65 65 47111 65 0:00 47'/" 4711" 2:30 65 KECOUERY 10:30 47'/"-P.L. 42'11" 0131 10:32 42'11" 10/33 42'11" 42'10314" 10:34 11:35 72103/4" 1:40 42' 103/4" 10:45 42'101/9" 42'10/2" 17:50 42'10/24 1:55 42' 1014 11:00 1-73 (7:30) 42'10" ¿ & size of engine or motor used: arks: DESCRIPTIO OF PUMP USED SIZE OF PULLEY INCH ORIFICE ON WIDTH OF WEIR DEPTH AIR LINE AIR PRES. WHEN NOT PUMPING STATIC LEVEL Height of DO. MARGE AT OF SETTING gauge above PION base



